

1. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 + 8x \leq \frac{37x - 3}{4} < -5 + 5x$$

- A. $[a, b)$, where $a \in [-6.75, 1.5]$ and $b \in [-1.65, 0.15]$
 - B. $(-\infty, a) \cup [b, \infty)$, where $a \in [-6, -0.75]$ and $b \in [-2.02, 0]$
 - C. $(a, b]$, where $a \in [-9, -0.75]$ and $b \in [-2.17, -0.45]$
 - D. $(-\infty, a] \cup (b, \infty)$, where $a \in [-5.25, -1.5]$ and $b \in [-2.25, 0]$
 - E. None of the above.
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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-4}{3} - \frac{6}{9}x \leq \frac{-4}{2}x + \frac{7}{7}$$

- A. $(-\infty, a]$, where $a \in [-6, 0.75]$
 - B. $[a, \infty)$, where $a \in [0.75, 4.5]$
 - C. $(-\infty, a]$, where $a \in [0.75, 4.5]$
 - D. $[a, \infty)$, where $a \in [-2.25, 0.75]$
 - E. None of the above.
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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$5x + 9 < 9x - 8$$

- A. $(-\infty, a)$, where $a \in [3.25, 8.25]$
- B. (a, ∞) , where $a \in [-4.25, -2.25]$
- C. $(-\infty, a)$, where $a \in [-4.25, 1.75]$
- D. (a, ∞) , where $a \in [-1.75, 5.25]$

E. None of the above.

4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$3x - 6 \geq 7x + 3$$

- A. $(-\infty, a]$, where $a \in [-2.6, -0.1]$
 - B. $(-\infty, a]$, where $a \in [0.2, 4.2]$
 - C. $[a, \infty)$, where $a \in [1.25, 8.25]$
 - D. $[a, \infty)$, where $a \in [-4.25, 0.75]$
 - E. None of the above.
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5. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No less than 4 units from the number 7.

- A. $(-\infty, 3] \cup [11, \infty)$
 - B. $[3, 11]$
 - C. $(3, 11)$
 - D. $(-\infty, 3) \cup (11, \infty)$
 - E. None of the above
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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-7 - 4x < \frac{20x + 8}{4} \leq 8 + 4x$$

- A. $(-\infty, a] \cup (b, \infty)$, where $a \in [-3, 0.75]$ and $b \in [1.5, 9]$
- B. $(a, b]$, where $a \in [-2.55, -0.22]$ and $b \in [5.25, 8.25]$

- C. $[a, b)$, where $a \in [-4.5, -0.75]$ and $b \in [4.5, 11.25]$
- D. $(-\infty, a) \cup [b, \infty)$, where $a \in [-2.17, 0.3]$ and $b \in [2.25, 7.5]$
- E. None of the above.

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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3 + 7x > 9x \text{ or } 4 + 5x < 6x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.75, -0.75]$ and $b \in [3.23, 4.42]$
- B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.27, -2.32]$ and $b \in [1.2, 1.65]$
- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-7.5, -2.25]$ and $b \in [0.07, 2.7]$
- D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3.97, 1.12]$ and $b \in [2.32, 4.35]$
- E. $(-\infty, \infty)$

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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-5 + 4x > 7x \text{ or } 7 + 7x < 9x$$

- A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-3.71, -3.04]$ and $b \in [0.97, 3.38]$
- B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.5, -1.72]$ and $b \in [-1.35, 3.23]$
- C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.21, -0.17]$ and $b \in [1.8, 5.1]$
- D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-1.8, -0.82]$ and $b \in [3.3, 3.67]$
- E. $(-\infty, \infty)$

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9. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{-9}{4} - \frac{6}{7}x < \frac{8}{8}x + \frac{7}{5}$$

- A. (a, ∞) , where $a \in [0, 4.5]$
 - B. $(-\infty, a)$, where $a \in [0, 4.5]$
 - C. $(-\infty, a)$, where $a \in [-2.25, 0]$
 - D. (a, ∞) , where $a \in [-6.75, -0.75]$
 - E. None of the above.
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10. Using an interval or intervals, describe all the x -values within or including a distance of the given values.

No more than 10 units from the number -7 .

- A. $(-17, 3)$
 - B. $[-17, 3]$
 - C. $(-\infty, -17) \cup (3, \infty)$
 - D. $(-\infty, -17] \cup [3, \infty)$
 - E. None of the above
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